

XVI.—*On some African Butterflies hitherto referred to the Genus Iolaus, with Descriptions of new Species.* By HAMILTON H. DRUCE, F.E.S.

I FIND that very little notice has been taken by various writers on this group of butterflies of the arrangement of the subcostal nervules. As I have been able to carefully examine nearly all the species, and find that there are considerable differences amongst them, it becomes necessary that they should be divided into several genera, which I propose to do as follows:—

*Key to the Genera (formerly Iolaus).*

IOLAUS.

- ♂ ♀. Four subcostal nervules to primaries.
- ♂. Inner margin of primaries below with a short tuft of hair and a scaly patch over; a scaly patch near base of secondaries above. Antennæ rather long and slender.

EPAMERA.

- ♂ ♀. Four subcostal nervules to primaries.
- ♂. Inner margin of primaries below with a short tuft of hair; a scaly patch near base of secondaries above. Antennæ short and thick.
- ♀. Scaly patch very large and shining. Antennæ longer and more slender.

SUKIDION.

- ♂. Four subcostal nervules to primaries; tuft of hair on inner margin of primaries below extending along to outer angle. No scaly patch on secondaries. Head large; antennæ long and rather stout.

ARGIOLAUS.

- ♂. Five subcostal nervules to primaries; tuft of hair on inner margin of primaries below and scaly patch near base on secondaries above.
- ♀. Four subcostal nervules to primaries.

TANUETHEIRA.

Costa of fore wing much arched, outer margin rounded, tails long and broad.

- ♂. Five subcostal nervules to primaries; tuft of hair on inner margin of primaries below and scaly patch near base on secondaries above.
- ♀. Four subcostal nervules to primaries.

## STUGETA.

♂ ♀. Three subcostal nervules to primaries.

♂. No secondary sexual characters.

## IOLAUS, Hübn.

*Iolaus*, Hübn. Verz. bek. Schmett. p. 81 (1816); Westw. Gen. D. L. p. 480 (1852), part; Hew. Ill. D. L. p. 40, Supp. p. 27, part.

Hewitson (*loc. cit.*) placed *Papilio eurisus*, Cr. (= *helius*, Fabr.), as the type of this genus, and Mr. Moore has lately recharacterized it, and has agreed in making *Papilio helius*, Fabr., the type (J. A. S. B. liii. p. 34). So far as I know there are only two other species which can be placed with it, viz. *Iolaus bolissus*, Hew., from the Congo, and *I. carina*, Hew.

*Iolaus helius.*

*Papilio helius*, Fabr. Spec. Ins. ii. p. 112. n. 489 (1781).

*Polygonmatius helius*, Godt. Enc. Méth. ix. p. 618. n. 3 (1823).

♀. *Papilio eurisus*, Cram. Pap. Exot. iii. t. cexxi. D, E (1782).

*Iolaus eurisus*, Hew. Ill. D. L., Supp. t. iv. figs. 31, 32 (1869).

*Iolaus helius*, Moore, Journ. A. S. B. liii. p. 34 (1884).

*Hab.* Sierra Leone, Winnebar (*C. R. Williams*): Mus. G. & S. Lagos (*Sir A. Moloney*). Cameroon Mountains: Mus. Druce.

Sir Alfred Moloney's collections have contained a large number of this species, but I have not noted it plentiful from other localities.

*Iolaus bolissus.*

*Iolaus bolissus*, Hew. Ent. Month. Mag. x. p. 123 (1873); Ill. Diurn. Lep., Supp. p. 28, pl. iv. a. figs. 48, 49 (1878).

*Hab.* Congo (*Rogers*): Hew. Coll.

The type specimens in the British Museum and one female in Messrs. Godman and Salvin's collection are all I have seen. It is probably the southern representative of *I. helius*.

*Iolaus carina.*

*Iolaus carina*, Hew. Ent. Month. Mag. x. p. 122 (1873); Ill. D. Lep., Supp. p. 28, pl. iv. a. figs. 52-54 (1878).

*Hab.* W. Africa: Hew. Coll.

A distinct species, known to me only from the type specimens in the British Museum (Hew. Coll.). The precise locality is unfortunately not noted.

## EPAMERA, gen. nov.

Allied to *Iolaus*; smaller. Venation the same. Fore wing below without the thick patch of scales above the tuft of hairs on the inner margin. Head broader; antennæ shorter, stouter, and less distinctly clavate.

Type *E. sidus*, Trimen.

*Epamera sidus*.

*Iolaus sidus*, Trimen, Trans. Ent. Soc. 1864, p. 176: Rhop. Afr. Aust. ii. p. 224, pl. iv. figs. 5, 6 (1866); South Afr. Butt. ii. p. 130 (1887); Hew. Ill. Diurn. Lep., p. 41, pl. xx. fig. 25 (1865).

*Hab.* Cape Colony, Kaffraria, Natal, Zululand, Lake Nyassa: Hew. Coll.

Mr. Trimen gives a further list of localities for this species on page 123 of his S. Afr. Butt. It seems to be a well-known South-African butterfly.

The type (♂) is in Messrs. Godman and Salvin's collection.

*Epamera (?) ceres*.

*Myrina ceres*, Hew. Ill. D. Lep. p. 39, pl. xvii. fig. 63 (1865).

*Iolaus ceres*, Trimen, S. Afr. Butt. vol. ii. p. 134 (1887).

*Hab.* Zululand, Delagoa Bay (*Hew.*).

I have placed this and the following species in this genus with considerable doubt, as we have no specimens for examination.

The only specimen I have seen is the one in the Hewitson Collection, which, as noted by Mr. Trimen, is in very poor condition.

*Epamera (?) mimosæ*.

*Iolaus mimosæ*, Trimen, Trans. Ent. Soc. 1874, p. 330, pl. ii. figs. 1, 2; S. Afr. Butt. vol. ii. p. 135 (1887).

*Hab.* S. Africa.

I have not seen this species, which is probably a rare one, as it is not represented in any collections to which I have access.

Mr. Trimen (*loc. cit.* p. 137) gives a long list of localities from which this insect has been obtained.

*Epamera (?) aphneoides*.

*Iolaus aphneoides*, Trimen, Trans. Ent. Soc. 1873, p. 110; S. Afr. Butt. vol. ii. p. 137 (1887).

*Iolaus canissus*, Hew. Ent. Month. Mag. x. p. 123 (1873).

*Iolaus aphnacoïdes*, Hew. Ill. D. Lep., Supp. pl. iv. a. figs. 50, 51 (1878).

*Hab.* Grahamstown (*Trimen*), Lake Nyassa (*Hew.*).

The only specimens I have seen are those in the Hewitson Collection.

- a. Scaly patch near base of hind wing very large and shiny.  
Antennæ longer and more slender.

*Epamera iasis.*

*Iolaus iasis*, Hew. Ill. Diurn. Lep., p. 42, t. xix. figs. 11, 12 (1865).

*Hab.* Gambia (*G. Carter*): Mus. G. & S. Addah: Mus. Druce. Lagos (*Sir A. Moloney*): Mus. Druce. Cameroons, Gaboon (*G. Carter*): Mus. G. & S.

*Epamera iaspis.*

*Iolaus iaspis*, H. H. Druce, Ann. & Mag. Nat. Hist. ser. 6, vol. v. p. 30 (1890).

*Iolaus jaron*, Stgr., M.S.

*Hab.* Sierra Leone: Mus. G. & S. Addah: Mus. Druce.

The type is in our collection. It is distinguished from *E. iasis*, Hew., by being of a darker blue, with greenish reflexions, and by the inner margin of primaries being blue in place of white, as in that species.

SUKIDION, gen. nov.

Allied to *Iolaus*. Costa less arched; apex more pointed, inner and outer margins straight. Underside of inner margin of primaries clothed with long black hairs from near base to apex. Secondaries circular, not produced at apex and anal angle, without any shining space on costal margin. Head broad; eyes very large; antennæ very long, with distinct elongated club. Two short linear tails, one on lower median and one on submedian nervure.

Type *S. inores*, Hew.

*Sukidion inores.*

*Iolaus inores*, Hew. Ent. Month. Mag. ix. p. 85 (1872); Ill. Diurn. Lep., Supp. p. 27, pl. iv. a. figs. 44, 45 (1878).

*Hab.* Gaboon (?).

The type specimen is now in Messrs. Godman and Salvin's

collection, and is the only one I have seen. Notwithstanding that Hewitson states that Mr. Druce was unable to ascertain its habitat, it has a written label "Gaboon," whence I think there is not much doubt that it came.

### ARGIOLAUS, gen. nov.

Allied to *Iolaus*, but with an additional subcostal nervule in male bifurcating from the fourth near the apex; female with four subcostal nervules. Antennæ thicker and more gradually clavate. Terminal joint of palpi shorter.

Type *A. silas*, Westw.

a. ♂ ♀. More or less blue on upper-side.

#### *Argiolaus silas*.

*Iolaus silas*, Westw. Gen. D. L. p. 481, pl. lxxiv. fig. 5 (1852).

*Thecla nega*, Herr.-Schäff. Ex. Schmett. figs. 51, 52 (1853?).

*Iolaus silas*, Trimen, Rhop. Afr. Austr. ii. p. 222. n. 128 (1866); S. Afr. Butt. ii. p. 127 (1887).

*Hab.* Cape Colony, Kaffraria, Natal, Zululand, Transvaal (*F. S. Barrett*): Mus. G. & S. Panmure.

Mr. Trimen (S. Afr. Butt. p. 129) gives a long list of localities for this species.

#### *Argiolaus silarus*.

*Iolaus silarus*, H. H. Druce, Ent. Month. Mag. xxii. p. 154 (1885).

*Hab.* Mombosa, East Central Africa (*Last*): Mus. G. & S. Delagoa Bay (*Mrs. Monteiro*).

This species appears to take the place of *A. silas* in East Africa. The upper crimson spot in hind wing of female is wanting in all the specimens I have seen. It is the var. A of Mr. Trimen (S. Afr. Butt. ii. p. 128) and is not allied to *I. iulus*, Hew., as stated on p. 154, Ent. Month. Mag. xxii.

#### *Argiolaus silanus*.

*Iolaus silanus*, Smith, Ann. & Mag. Nat. Hist. ser. 6, vol. iii. p. 137 (1889).

*Hab.* Mombosa (*Last*): Mus. H. G. Smith.

This species is unknown to me.

*Argiolaus Trimeni.*

*Iolaus Trimeni*, Wallgr. Öfv. K. Vet.-Akad. Förh. p. 87 (1875);  
Trimen, S. Afr. Butt. ii. p. 129, pl. vii. fig. 4 (1887).

*Hab.* Transvaal.

I have not seen this species. Judging from Mr. Trimen's figure it is perfectly distinct.

*Argiolaus lukabas.*

*Iolaus lukabas*, H. H. Druce, Ann. & Mag. Nat. Hist. ser. 6, vol. v.  
p. 30 (1890).

*Hab.* Gambia (*Sir A. Moloney*): Mus. Druce.

The type specimen is the only one I have seen. It is apparently allied to *A. Trimeni*, but has a row of four distinct black spots on the outer margin of hind wing above, and is without the black and yellow lines on the underside.

*Argiolaus lekanion*, sp. n.

♂. Allied to *A. lukabas*, mihi. Upperside purer and rather darker blue; fore wing with the apex and outer margin more broadly black; hind wing with the shining patch and the anal fold darker and with the blue extending to the outer margin, and without the black spots; lobe orange. Underside as in *A. lukabas*, but the orange spot on hind wing between the median nervules large and distinct. The patch of hairs on underside of primaries as in *A. lukabas*.

Abdomen black above, white below; legs white; palpi black above, white below. Antennæ black.

Expanse  $1\frac{1}{2}$  inch.

*Hab.* Sierra Leone: Mus. Druce.

We have two males of this species which do not differ and can at once be separated from the allied species.

*Argiolaus iulus.*

*Iolaus iulus*, Hew. Ill. Diurn. Lep., Supp. p. 9, pl. iv. figs. 41-43 (1869).

*Iolaus iulus*, var., C. Oberthür, Etudes d'Ent. iii. p. 22 (1878).

*Hab.* Sierra Leone: Muss. G. & S. and Druce. Sherborough Island: Hew. Coll. Zanzibar (*Oberthür*).

We have two males from Sierra Leone which are identical with Hewitson's type in the British Museum; but in a female in Messrs. Godman and Salvin's collection the red on the hind wing is replaced by pale yellow on both surfaces. It is

the most brilliantly coloured species of the group, and Hewitson's figure does not do it justice. It is, I think, doubtful whether the insect referred to by M. Oberthür can be placed under this name.

*Argiolaus Jamesoni*, sp. n.

*Iolaus iulus*, Godm. & Salv. in Mrs. Jameson's Story of Rear Column, p. 442 (1890).

♂. Allied to *A. iulus*, Hew. Upperside paler and less brilliant blue; primaries distinctly whitish at base of the costa: secondaries, cilia pure white; a dark red spot, below which is a small black one occupying the upper half of the lobe, the lower part being white, with a narrow black line at the margin; tails pure white, with a narrow black central line. Underside creamy white; primaries with costal margin and apex slightly fulvous ochreous: secondaries with a well-marked orange band, thickening slightly at each nervule, running from the apex to the anal angle, where it converges into the usual anal reddish-orange patch, and connected with a patch of the same yellow (having a black spot in centre) between the lower median nervules; a narrow broken zigzag line running from near the apex inside the yellow band and reaching to the inner margin, where it is rather more distinct; a deep black spot, with a few blue scales under, in the lobe, and on the anal orange patch are a few pale lavender scales. A narrow black marginal line from the apex to the anal angle and down the centre of the tails; cilia white.

Head white; thorax greyish; palpi white below, black above, and black-tipped; legs white; antennæ black, spotted with white beneath.

Expanse 2 inches.

*Hab.* Yambuya Camp, Aruwimi River (*J. S. Jameson*): Mus. G. & S.

This is evidently a distinct species from *A. iulus*, Hew., to which it was referred by Messrs. Godman and Salvin in the list of butterflies collected by the late Mr. Jameson ('Story of the Rear Column,' p. 442, 1890). It is a different shade of blue. The specimen has a label attached, "Yambuya Camp, Jameson."

*Argiolaus mæsa*.

*Myrina mæsa*, Hew. Ill. D. Lep. p. 27, pl. xi. fig. 45 (1863).

*Hab.* Sierra Leone.

I am not certain that this species is correctly placed here.

Hewitson states that the type is a male, but his figure has much the appearance of a female, and a specimen in the Hewitson Collection labelled *mæsa* is almost certainly a female, and seems allied to that sex of *A. iulus*. The specimen in the British Museum is in very poor condition.

*Argiolaus alcibiades.*

*Iolaus alcibiades*, Kirby, Syn. Cat. p. 409 (1871).

*Papilio timon*, Don. (nec Fabr.), Nat. Rep. iii. t. xcvii. (1825).

*Hab.* Sierra Leone: Mus. Druce. Lagos (*Sir A. Moloney*). West Coast: Mus. G. & S.

It is with considerable doubt that I refer the specimens before me to this species. Two females, one labelled West Coast of Africa, in Messrs. Godman and Salvin's collection, and one lately brought home by Sir Alfred Moloney from Lagos, which undoubtedly represent the same species, agree well with Donovan's figure on the underside, but on the upperside the blue is much paler, and they have the usual orange spot on the lobe, which is not shown in the figure; the blue also on the hind wing does not reach below the black spots as shown in the figure. In two males which are undoubtedly referable to the females noted above the lobe only is orange-red, the shiny patches are greenish brown and large, and on the underside the red bands on both wings have almost entirely disappeared, leaving only the faint black line and the prominent orange spots near the anal angle of hind wing.

It will be noted that no trace of any shining patch is shown in Donovan's figure.

The hairs attached to underside of inner margin of primaries are black.

*Argiolaus paneperata.*

*Iolaus paneperata*, H. H. Druce, Ann. & Mag. Nat. Hist. ser. 6, vol. v. p. 30 (1890).

*Hab.* Lagos (*Sir A. Moloney*): Mus. Druce.

A distinct species, somewhat like *A. silas*, Hew., on the upperside, but very different beneath. The patch of hairs on fore wing below is black in this species, yellow in *A. silas*.

*Argiolaus laon.*

*Iolaus laon*, Hew. Ill. Diurn. Lep., Supp. p. 28, pl. iv. a. figs. 46, 47 (1878).

*Hab.* Sierra Leone: Mus. Druce. Gold Coast.



The type specimen (♀) is now in Messrs. Godman and Salvin's collection.

♂. On the upperside a darker and richer blue, with the borders much blacker and the hind wing without the inner black patch near the anal angle. The shining patch on hind wing is large, black, and with a large buff central spot. On the underside it differs from the female by having the inner marginal area of fore wing black, powdered with white scales, and extending up to the wall of the cell and along the lower median nervule almost to the margin.

The hairs on underside of fore wing are deep black.

*Argiolaus glaucus*.

*Iolaus glaucus*, Butl. P. Z. S. 1885, p. 766.

*Hab.* Somali-land.

*Argiolaus Belli*.

*Iolaus belli*, Hew. Ill. Diurn. Lep., Supp. p. 9, pl. iv. figs. 33, 34 (1869).

*Hab.* Sherborough Island (*Hew.*). W. Africa: Mus. G. & S.

I have not seen the male of this insect.

*Argiolaus cyteis*.

*Iolaus cyteis*, Hew. Ent. Month. Mag. xi. p. 182 (1875).

*Iolaus cyteis*, Hew. Ill. Diurn. Lep., Supp. p. 29, pl. iv. a. figs. 55, 56 (1878).

*Hab.* Fernando Po (*Hew.*).

The female of this species does not seem to have been described.

b. ♂ green on upperside, ♀ greyish white.

*Argiolaus calisto*.

*Anthene calisto*, Doubl. & Hew. Gen. D. Lep. t. lxxv. fig. 6, ♂ (1852).

*Iolaus calisto*, Hew. Ill. D. Lep. p. 41 (1865).

*Hab.* Gambia: Mus. Druce. Sierra Leone, Gaboon (*J. Carter*): Mus. G. & S.

The female, which has not been described, is somewhat larger than the male and is greyish white, with the costa, apex, and outer margin of fore wing and apex of hind wing blackish brown. Hind wing with an ultramedian, somewhat irregular, brown band reaching from the apical patch to the

anal margin above the lobe; beyond this a less distinct submarginal band and a broad, dark brown, marginal band. Lobe reddish orange, with a black spot and an orange spot just above the submedian nervure.

Both wings slightly suffused with bluish-grey scales at the base; cilia of fore wing brown, of hind wing pure white. Underside as in the male.

Although this species has been described some years, it is not common.

c. ♂ blue on upperside, ♀ white.

*Argiolaus menas*.

*Iolaus menas*, H. H. Druce, Ann. & Mag. Nat. Hist. ser. 6, vol. v. p. 29 (1890).

*Hab.* Gambia: Mus. Druce. Gaboon (*G. Carter*): Mus. G. & S.

The two males in Messrs. Godman and Salvin's collection from Gaboon are of a somewhat more violaceous blue than the type and have some white scales on the bases of the median nervules of the primaries.

d. ♂ ♀ white on upperside.

*Argiolaus ismenias*.

*Lyccena ismenias*, Klug, Symb. Phys. p. 40, figs. 1, 2 (1834).

*Hab.* Ambukohl (*Klug*). Lagos: Mus. Druce.

Sir A. Moloney's collections contained a considerable number of this species; but I have not seen it from any other locality. It is perhaps the most remarkable of the genus, both sexes being alike in coloration.

TANUETHEIRA, gen. nov.

Allied to *Argiolaus*, male having five subcostal nervules, female four. Costa of primaries more arched, outer margin rounded. Secondaries with three distinct tails, the third being much longer and broader than in *Argiolaus*. Lobe scarcely developed and without the usual red spot. Antennæ moderately long and slender, much as in *Iolaus*.

Type *T. timon*, Fabr.

*Tanuetheira timon*.

*Papilio timon*, Fabr. Mant. Ins. ii. p. 65 (1787).

*Iolaus timon*, Doubl. & Hew. Gen. D. Lep. p. 481 (1852).

*Myrina timon*, Butl. Cat. Fab. p. 184 (1870); Lep. Exot. p. 42, t. xiv. figs. 3, 4 (1870).

*Iolaus timon*, Hew. Ill. Diurn. Lep., Supp. pp. 10, 29, pl. iv. a. fig. 57, ♂ (1878).

*Hab.* Sierra Leone, Old Calabar: Muss. G. & S. and D.

There seems to have been a good deal of doubt about the identification of this insect until Mr. Butler procured a drawing of the type, which he figures. Hewitson afterwards figured the male.

*Tanuetheira prometheus*, sp. n.

♂. Allied to *T. timon*, Fabr., from which it differs by having a large bronze-brown, shining, discal spot on the fore wing above and by the shining patch on hind wing being larger.

♀ scarcely distinguishable from that sex of *T. timon*, but with somewhat less black at the anal angle of hind wing above.

Expanse, ♂  $1\frac{4}{5}$  to  $2\frac{1}{5}$  inches, ♀ 2 inches.

*Hab.* Sierra Leone: type Mus. Druce.

A distinct species, easily recognized by the bronze discal spot on the primaries. We have two males in our own collection, and there is one in Messrs. Godman and Salvin's, which do not vary except in size.

STUGETA, gen. nov.

Allied to *Tajuria*, Moore, but differs by having three subcostal nervules only in both sexes in place of four, as in that genus, and by the apex and outer margin of primaries being somewhat more rounded. No secondary sexual characters.

Type *S. Bowkeri*, Trimen.

*Stugeta Bowkeri*.

*Iolaus Bowkeri*, Trimen, Trans. Ent. Soc. 3rd ser. ii. p. 176 (1864); Rhop. Afr. Austr. ii. p. 225, pl. iv. fig. 4 (1866); S. Afr. Butt. vol. ii. p. 132 (1887); P. Z. S. 1891, p. 85; Hew. Ill. D. Lep. p. 41 (1865).

*Hab.* Congo (*Butler*), Momboia (*Last*): Mus. G. & S. Cape Colony, Kaffraria, Natal (*Trimen*).

Mr. Trimen gives (*loc. cit.* p. 134) a list of localities in S. Africa where this species has been captured.

*Stugeta marmoreus.*

*Aphnaeus*? *marmoreus*, Butl. Ent. Month. Mag. ii. p. 169 (1866).  
*Iolaus marmoreus*, Hew. Ill. D. Lep., Supp. p. 11 (1869).

*Hab.* White Nile.

The only specimen I have seen is the type in the British Museum. It appears distinct from the preceding.

I have not included in the present paper several species which have been either described or placed in the genus *Iolaus* by various authors, as they do not seem to me to be properly referable to any genera noted here, *i. e.* :—

*Myrina pallene*, Wallengr., placed in *Iolaus* by Mr. Trimen.

*Iolaus argentarius*, Butler, from Madagascar.

*Iolaus piaggia*, Oberthür, from Abyssinia.

*Iolaus tajoraca*, Walker, from Arabia.

XVII.—*On the Phasmidæ of Madagascar, with the Description of a new Genus and Species in the Collection of the British Museum.* By W. F. KIRBY, Assistant in Zoological Department, British Museum (Natural History).

WE are constantly being reminded of the incompleteness of our knowledge as regards entomology, and sometimes even in the case of the largest and most conspicuous insects of countries which have frequently been visited by collectors; but I was hardly prepared to find that practically nothing is yet known of the Phasmidæ of Madagascar.

The four following species, all belonging to genera peculiar to the island, are literally all which have been described as inhabiting it :—

- (1) *Acroioptera fallax*, Coq. Ann. Soc. Ent. France, (4) i. p. 495 (1861). Port Leven.
- (2) *Parectatosoma hystrix*, Wood-Mason, Journ. As. Soc. Beng. xviii. p. 117 (1879). Fianarantsoa, Antananarivo.
- (3) *P. echinus*, Wood-Mason, *l. c.* p. 118 (1879). Fianarantsoa.
- (4) *Orobia nigrolineata*, Stål, Svensk. Handl. Bihang, ii. (17) p. 17 (1875). Madagascar.